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TANZANIA REWARDS SCIENTIFIC ACHIEVEMENT

by John Mkamwa

TANZANIA, IDRC -- A year ago the government of Tanzania allocated funds to be used for a series of awards to individuals or institutions in recognition of their achievements in the application of science and technology to the country's economic development.

Response to the launching of the award, known as the Tanzania Award for Scientific and Technical Achievement, or TASTA, was enthusiastic. It seems the spirit of innovation is high among researchers, technologists and even students across the country.

In fact 25 candidates were nominated for TASTA awards in 1982. The National Scientific Council (NSC), which is responsible for the programme, selected three individuals and an institution as the first recipients of the award. Each award consists of a gold-plated medal, a certificate, and a cash grant of not less than 50,000 Tanzanian shillings (about 6,000 US dollars).

The aims and objectives of the TASTA awards programme, according to the Director General of the NSC, Professor Hosea Kayumbo, are to encourage creativity and initiative for greater scientific and technological achievement, and to foster the use of such achievements to promote and accelerate the economic development of the country. In particular, the judges looked for demonstrated practical achievements, such as satisfying basic needs of education, food, clothing, health and energy, or in the adaptation of foreign technology or processes for use in Tanzania.

Also important is the substitution of local materials for imported ones, and the design or prototype of industrial plants, machinery and equipment for manufacture and use in Tanzania. One of the best examples in this respect could be the innovations of Christopher Chale, one of the individual award winners.

A supervisor at a farm implements factory in Dar es Salaam who joined the company in 1970 as a professional fitter and turner mechanic, Chale's technical ingenuity has brought substantial benefits to the company. His innovations include modifying a painting machine to use an air compressor instead of replacing a costly imported motor. The machine would otherwise have remained idle indefinitely. It has been estimated that this piece of ingenuity saved the company some 8 million shillings in 1981 alone.

Another of Chale's innovations was the conversion of a malfunctioning hydraulic system into a pneumatic one. For this purpose Chale, who has no secondary level education, designed and produced a hand operated two-way control valve. It certainly fulfils the requirements, and it is both simple and cheap. Chale also turned his ingenuity on the plant's rubber conveyor belt, which had frequent breakdowns, replacing it with chains made from scrap steel. The resulting belt is inexpensive and can better withstand the high temperatures it is subjected to.

"All three innovations are good alternatives to the original designs. They are appropriate in the scope of the firm because they are cheap and amazingly simple," observed Professor S. Lwakabamba, head of the Mechanical Engineering Department of the University of Dar es Salaam. He strongly recommended Chale for one of the first TASTA awards.

The award went also to A.H. Sherrif and B.M. Lalji, of Zanzibar, who have found a new use for an old product. Used oil, which is easily obtained from garages or power transformers, can be used as a fuel, as has been demonstrated by the two technologists, who have set up a factory making ceramic articles. The use of oil as fuel is not new. What is new is their simple technique, that can be easily adapted by anyone who wants to use it.

Waste "dirty" oil need only be filtered and any water removed to make it ready for use. The two had noted that when oil is dripped along with water onto a hot metal plate it bursts into flames. The equipment required therefore consists only of two drums, one containing oil, the other water, with gate valves to control the flow of the two onto a metal plate. This technology can be used to heat pottery at a very high temperature, and the two men have worked relentlessly to spread their invention to the villages.

The institutional award went to the Ukiliguru Agricultural Research Centre. Situated near Lake Victoria, the Centre was founded in 1932, and has been engaged in research on cotton for 50 years. It has helped increase production through genetic improvements, seed redressing, and improved agronomic practices. The achievement that brought it a TASTA award, however, was the development of a cotton plant resistant to destructive leafhoppers known as jassids. The growing of jassid-resistant stocks from dressed seed has largely removed from the scene those fields of gnarled and stunted plants with shrivelled leaves that characterised the cotton crop in former years.

The first year of the TASTA programme showed that scientific curiosity is alive and well in Tanzania. However, a few of the applicants showed more inventiveness in their applications than in their innovations. There was one, for instance who claimed to have a cure for jaundice and heart disease. Chemical analysis showed the herbal concoction to be worthless, however. And then there was the applicant who claimed to have a substitute power source for the ox-drawn plough -- replace the ox with a man!

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